

REMARKS

Claims 1, 3-10 and 12-14 are rejected. In response, claims 1 and 4 are amended, and new claims 15 and 16 are added. Support for claims 15 and 16 is found in claim 1. The pending claims are claims 1, 3-10 and 12-14. In view of these amendments and the following comments, reconsideration is requested.

In the Action, claim 4 has been objected to as being a duplicate of claim 3. Claim 4 has been amended to recite that the chips have high levels of flavonoids, thereby avoiding duplication. Support for such recitation is found on page 6, lines 6-11 of the present application.

Rejection of Claims 1 and 3-7 Under 35 U.S.C. § 103(a) over Tschirmer

Claims 1 and 3-7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over EP 0 494 519 to Tschirmer (hereinafter "Tschirmer").

Applicants' claimed process, as amended, is directed to a process for preparing bleached mechanical pulp having high brightness from wood chips having low bleachability in which such wood chips are impregnated with a chemical liquor consisting essentially of an aqueous solution of sodium hydroxide and a chelating agent to remove flavonoids, lignin and /or metals prior to primary refining, since such materials inhibit bleaching, which is conducted subsequent to primary refining.

Tschirmer discloses a process in which impregnation and bleaching are conducted together prior to refining. Thus, Tschirmer discloses using multiple impregnation steps prior to refining, in which the first impregnation step uses a chelating agent (page 5, lines 16-17). The second impregnation step uses alkaline peroxide and soluble magnesium salts with stabilizers and chelating agents or alkaline peroxide with silicate stabilizers (page 5, line 50

to page 6, line 1). The third impregnation step uses an aqueous alkaline peroxide solution, which contains peroxide stabilizers (page 6, lines 2-3).

Thus, it is apparent that unlike Applicants' claimed impregnation treatment which removes materials prior to bleaching that would reduce bleaching efficiency, the multiple-stage Tschirmer impregnation treatment involves use of a chemical liquor that contains peroxides, including alkaline peroxide, and soluble magnesium salts, such that impregnation and bleaching are carried out simultaneously. Such impregnation with bleach is detrimental to Applicants' claimed process, as it prevents efficient bleaching of wood chips having low bleachability, since the bleach comes in contact with metal ions which inhibit bleaching and reduce bleaching efficiency, as indicated in the sentence bridging pages 8-9 of the present application.

Claim 1 has been amended to recite that removal of the impregnating chemical liquor, which consists essentially of sodium hydroxide and a chelating agent is next followed, by the sequential steps, in order, of (a) defibration by primary refining, bleaching, and beating by secondary refining, or (b) defibration by primary refining, beating by secondary refining and bleaching. Thus, unlike the Tschirmer process, bleaching does not take place until after primary refining. Additionally, claim 1 has been amended to recited that the process consists essentially of the recited steps, thereby excluding addition of peroxides prior to bleaching. The language "consisting essentially of" has been held to distinguish prior art where the presence of a component, such as the peroxide of Tschirmer would materially affect the basic and novel characteristics of the claimed invention. *In re Herz*, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976) (emphasis in original).

Additionally, the Examiner concedes that Tschirmer does not disclose secondary refining, but concludes that treatment of the Tschirmer pulp with secondary refining would have been obvious without citing prior art or providing an affidavit for such treatment of the

Tschirmer pulp. However, such assertions of specific knowledge of the prior art should be supported by citation to some reference work recognized as standard in the pertinent art and the Examiner has not done so. *In re Ahlert*, 424 F.2d at 1091, 165 USPQ at 420-21. See also *In re Grose*, 592 F.2d 1161, 1167-68, 201 USPQ 57, 63 (CCPA 1979).

Accordingly, for all of the reasons give above, the rejection of claims 1 and 3-7 over Tschirmer should be withdrawn.

Rejection of Claims 1 and 3-7 Under 35 U.S.C. § 103(a) over Lindahl

Claims 1 and 3-7 are also rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,599,138 to Claims 1 and 3-7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,599,138 to Lindahl (hereinafter “Lindahl”).

Lindahl conducts bleaching and refining simultaneously as indicated in Figures 1 and 2 by adding bleaching solution via duct 15 and at column 14, lines 63-68. Such treatment is unlike Applicants’ claim 1 process for obtaining high brightness from wood chips having low bleachability, in which bleaching is only conducted after primary refining. Since Lindahl conducts bleaching and refining at the same time, the color forming components, that are eluted from the pulp by refining, inhibit bleaching, which is a particular problem when attempting to achieve high brightness from wood chips having low bleachability.

Reference is made in the Office Action to column 19, lines 14-22 of Lindahl as indicating that bleaching is not limited to the primary or secondary refiner. However, it is believed that the use of the term “also” in column 19, line 19, indicates that that bleach can be introduced at a later refining step in addition to the first refining step. Lindahl clearly does not appreciate the detrimental effect of adding bleaching solution to the primary refiner, as he illustrates addition of bleach solution to the primary refiner in both Figures 1 and 2 via duct 15.

Accordingly, the rejection of claims 1 and 3-7 over Lindahl should be withdrawn.

Rejection of Claims 8-10 and 12-14 Under 35 U.S.C. § 103(a) over Kilgannon

Claims 8-10 and 12-14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 7,018,509 to Kilgannon et al (hereinafter “Kilgannon”).

As recited in claim 8, Applicant’s claimed sequence is primary refining, washing, bleaching and secondary refining. Thus, Applicants’ washing step is after primary refining and before bleaching. Applicants send bleached pulp to the secondary refiner. This claimed sequence clearly distinguishes the Kilgannon sequence, as shown in Figure 1, which is primary refining 38, secondary refining 50, washing stage 60, bleaching stage 40 and bleaching stage 42.

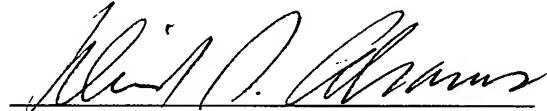
Kilgannon conducts primary refining at elevated temperature and pressure (column 6, lines 10-16), which causes elution of colored components, and next passes the fibrillated wood chips to secondary refining without washing the fibrillated chips to remove the colored components eluted before being subjected to secondary refining. As a result, the pulp is colored with the colored components, making it impossible to bleach the pulp efficiently in the subsequent bleaching stage. Applicants eliminate this detriment by washing the fibrillated chips resulting from primary refining prior to bleaching, and sending the bleached pulp to secondary refining.

Accordingly, Applicants’ claimed process is clearly not obvious over Kilgannon.

For the foregoing reasons, the rejection of claims 8-10 and 12-14 over Kilgannon should be withdrawn.

In view of the amendments and the above comments, reconsideration and allowance are requested.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "David S. Abrams", written over a horizontal line.

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